

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Status of the Claims

Claims 1, 4, and 11 are amended. Claims 14-20 are added. No new matter is added.

Claim Rejections – 35 USC §102 and 103

Claims 1-13 are rejected under 35 U.S.C. §102(e) as being anticipated by Ayai (WO 2004/013871, U.S. Patent No. 7,293,343; hereinafter Ayai). Claims 1-13 are rejected under 35 U.S.C. 103(a) as being obvious over Ayai (WO 2004/013871 as evidenced by U.S. Patent no. 7,293,343). These rejections are respectfully traversed.

Submitted with this response is a certified copy of an English translation of the priority document of the present application. The English translation is submitted with a declaration from Masato Sasaki that states that he knows both Japanese and English languages, that to the best of his knowledge and belief the attached English translation is a true and correct translation of the Japanese Patent Application No. 2003-324493 filed on September 17, 2003. The present application claims priority from the priority document dated September 17, 2003, which is earlier than the filing date (October 6, 2004) of Ayai. Thus Ayai does not qualify as prior art to the present application. Therefore it is respectfully submitted that claims 1-13 are allowable over Ayai.

Claim Rejections – 35 USC §103

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being obvious over Li et al. (U.S. Patent no. 6,247,224; hereinafter Li '224). Claims 1-13 are rejected under 35 U.S.C. 103(a) as obvious over Li et al. (U.S. Patent No. 6,555,503; hereinafter Li '503).

Claims 1, and 4, as amended recite *inter alia*, the oxide superconductor wire has a thickness that has been reduced by heat treatment. (For example at Original specification, page 5, lines 1-5, page 30, line 9-10 and Fig. 10(A)). The cited references, Li '224 and Li

'503, alone or in combination, fail to teach suggest or render predictable at least the above recited features.

In particular, Li '224 teaches, a series of processing steps: 1) phase modification of the precursor oxide article prior to rolling operations; 2) high reduction rolling of the oxide precursor article; 3) use of constrained volume multifilamentary geometries for the article; and 4) single sintering process for conversion of the precursor oxide into the oxide superconductor. (Li '224, column 10, lines 13-20) The filament density of $\geq 95\%$ theoretical density of the multifilament superconducting article is obtained by a single high reduction rolling draft instead of the heat treatment (Li '224, column 15, lines 23-27). The variability of the filament dimension increases by the heat treatment instead of reducing. (Li '224, column 26, lines 22-23 and Table 3) Li '224 fails to teach an oxide superconductor wire has a thickness that has been reduced by heat treatment.

Accordingly, Li '503 teaches the steps of heat treating the precursor oxide to convert tetragonal phase BSCCO 2212 into the orthorhombic phase BSCCO 2212, densifying and texturing the precursor in a single large reduction rolling operation, and heat treating the short length of the BSCCO 2223 precursor tape (Li '503, column 14, lines 41-63). The density after the large reduction rolling is $>90\%$ (Li '503, column 15, lines 61-63), however, the thickness of the tape increases by the heat treatment (Tables 1-5, increase in thickness %) . Therefore, Li '503 fails to teach or suggest an oxide superconductor wire has a thickness that has been reduced by heat treatment.

Claims 1 and 4 are believed to be allowable because the cited references fail to teach, suggest or render predictable the features of claims 1 and 4. Because claims 2-3 and 5-10, directly or indirectly, depend from claims 1 and 4 they are believed to be allowable.

Claim 11, as amended recites *inter alia*, heat treating to reduces the thickness of the oxide superconducting wire. As discussed above regard to claims 1 and 4, Li '224 and Li '503, alone or in combination, fail to teach suggest or render predictable at least the above recited features. Li '224 and Li '503 do not teach, suggest or render predictable heat treating

to reduces the thickness of the oxide superconducting wire. Instead, as discussed above, Li '224 and Li '503, teach increasing the thickness after heat treatment.

New Claims

New claims 14 – 20 are added to further protect aspects of the present invention. New claims 14 – 20 are supported by the present disclosure, at least with respect to claims 14, 17 and 19 (For example at Fig. 10A, page 30, lines 14-16), claims 15, 18 and 20 (For example at Page 5, lines 1-5), claim 16 (For example at Page 5, lines 1-5). New claims 14 – 20 each depend from independent claims 1, 4 or 11, respectively. Accordingly, each of the new claims 14 – 20 are patentably distinguishable over the references of record, at least for reasons as discussed above with respect to claims 1, 4 and 11. In addition each new claim 14 – 20 are further distinguished from the references of record.

For example, new claims 14, 17 and 19 are dependent on claims 1, 4 and 11, respectively, and incorporate every features of the parent claims and further recite, the oxide superconductor wire thickness has been reduced by heat treatment from about 0.006 mm to about 0.01 mm. As discussed above regarding claims 1, 4 and 11, Li '224 and Li '503 fail to teach, suggest or render predictable the oxide superconductor wire thickness being reduced by heat treatment. Because claims 14, 17 and 19 depend from claims 1, 4 and 11, they are believed to be allowable for at least the same reasons claims 1, 4 and 11 are believed to be allowable.

For example, new claims 15, 18 and 20 depend from claims 1, and 4, respectively, and incorporate every features of the parent claims and further recite, reduced number of gaps between oxide superconducting crystals relative to the oxide superconducting crystals without the reduction of the thickness. As discussed above regarding claims 1, 4 and 11, Li '224 and Li '503 fail to teach, suggest or render predictable the oxide superconductor wire thickness being reduced by heat treatment, thus the number of gaps between the superconducting crystals are not reduced in Li '224 and Li '503. Because claims 15, 16 and 20 depend from claims 1 and 4, they are believed to be allowable for at least the same reasons claims 1 and 4 are believed to be allowable.

For example, new claim 16 depends from claim 1, and incorporate every features of claim 1 and further recites, further comprising an increased sintering density relative to the sintering density prior to the heat treatment. As discussed above regarding claim 1, Li '224 and Li '503 fail to teach, suggest or render predictable the oxide superconductor wire thickness being reduced by heat treatment. Li '224 and Li '503 teach increasing the thickness of the superconductor.

Concluding Remarks

After amending the claims as set forth above, claims 1-20 are pending in this application. Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

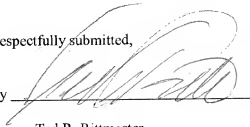
The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment instructions in EFS-Web being incorrect or absent, resulting in a rejected or incorrect credit card transaction, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date

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By



FOLEY & LARDNER LLP
Customer Number: 23392
Telephone: (213) 972-4594
Facsimile: (213) 486-0065

Ted R. Rittmaster
Attorney for Applicant
Registration No. 32,933